GLOSSARY

AEC	U.S. Atomic Energy Commission
ALARA	as low as reasonably achievable
CAM	continuous air monitor
CEDE	committed effective dose equivalent
CERCLA	*Comprehensive Environmental Response, Compensation and Liability Act of 1980*
CFR	*Code of Federal Regulations*
CH	contact handled
CH-TRU	contact-handled transuranic (waste)
Ci	curie (unit of radioactivity)
CWC	Central Waste Complex
CY	calendar year
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy, Richland Operations Office
EA	environmental assessment
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ERPGs	emergency response planning guidelines
ESA	*Endangered Species Act of 1973*
FH	Fluor Hanford
FONSI	finding of no significant impact
ft^3	cubic foot
FY	fiscal year
g	gram
HazOp	hazards and operability analysis
HCRC	Hanford Cultural Resources Review
HCRL	Hanford Cultural Resources Laboratory
HEPA	high-efficiency particulate air (filter)
HSW-EIS	draft Hanford Site Solid (Radioactive and Hazardous) Waste Program-EIS
kg	kilogram
LLBG	Low-Level Burial Grounds
LLW	low-level waste
m^3	cubic meters
mg/m^3	milligrams per cubic meter
mrem	millirem per hour

GLOSSARY (cont)

NDA	nondestructive analysis (assay method)
NEPA	*National Environmental Policy Act of 1969*
NOC	notice of construction (for air permit)
PCB	polychlorinated biphenyl
PNNL	Pacific Northwest National Laboratory
Pu	Plutonium
RCRA	*Resource Conservation and Recovery Act of 1976*
RH	remote handled
RH-TRU	remote-handled transuranic (waste)
rem	common unit of radiological dose equivalent
ROD	Record of Decision (under NEPA process or CERCLA process)
SWITS	Solid Waste Information and Tracking System
TEDE	total effective dose equivalent
TEELs	temporary emergency exposure limits
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
TRU	transuranic (waste)
TSCA	*Toxic Substance Control Act of 1976*
TSD	treatment, storage and/or disposal (unit)
U	uranium
USC	*United States Code*
WAC	*Washington Administrative Code*
WDOH	Washington State Department of Health
WHC	Westinghouse Hanford Company

SCIENTIFIC NOTATION CONVERSION CHART

Equivalent Values		
10^{-1}	1 E-01	0.1
10^{-2}	1 E-02	.01
10^{-3}	1 E-03	.001
10^{-4}	1 E-04	.0001
10^{-5}	1 E-05	.00001
10^{-6}	1 E-06	.000001
10^{-7}	1 E-07	.0000001
10^{-8}	1 E-08	.00000001

METRIC CONVERSION CHART

Into metric units

If you know	Multiply by	To get
Length		
inches	25.40	millimeters
inches	2.54	centimeters
feet	0.3048	Meters
yards	0.9144	Meters
miles (statute)	1.60934	kilometers
Area		
square inches	6.4516	square centimeters
square feet	0.09290304	Square meters
square yards	0.8361274	Square meters
square miles	2.59	square kilometers
acres	0.404687	hectares
Mass (weight)		
ounces (avoir)	28.34952	Grams
pounds	0.45359237	kilograms
tons (short)	0.9071847	tons (metric)
Volume		
ounces (U.S., liquid)	29.57353	milliliters
quarts (U.S., liquid)	0.9463529	Liters
gallons (U.S., liquid)	3.7854	Liters
cubic feet	0.02831685	cubic meters
cubic yards	0.7645549	cubic meters
Temperature		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius
Energy		
kilowatt hour	3,412	British thermal unit
kilowatt	0.94782	British thermal unit per second
Force/Pressure		
pounds (force) per square inch	6.894757	kilopascals

Out of metric units

If you know	Multiply by	To get
Length		
millimeters	0.03937	inches
centimeters	0.393701	inches
meters	3.28084	feet
meters	1.0936	yards
kilometers	0.62137	miles (statute)
Area		
square centimeters	0.155	square inches
square meters	10.7639	square feet
square meters	1.19599	square yards
square kilometers	0.386102	square miles
hectares	2.47104	acres
Mass (weight)		
grams	0.035274	ounces (avoir)
kilograms	2.204623	pounds (avoir)
tons (metric)	1.1023	tons (short)
Volume		
milliliters	0.033814	ounces (U.S., liquid)
liters	1.0567	quarts (U.S., liquid)
liters	0.26417	gallons (U.S., liquid)
cubic meters	35.3147	cubic feet
cubic meters	1.308	cubic yards
Temperature		
Celsius	multiply by 9/5ths, then add 32	Fahrenheit
Energy		
British thermal unit	0.000293	kilowatt hour
British thermal unit per second	1.055	kilowatt
Force/Pressure		
kilopascals	0.14504	pounds per square inch

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Third Ed., 1990, Professional Publications, Inc., Belmont, California.

DEFINITION OF TERMS

Contact-handled (CH) waste containers produce radiation dose rates less than or equal to 200 millirem (mrem) per hour at the container surface. CH containers can be handled safely by direct contact with appropriate health and safety measures.

Low-level waste (LLW) is radioactive waste, including accelerator-produced waste, that is not high-level waste, spent nuclear fuel, transuranic waste, or byproduct material [as defined in Section 11e.(2) of the *Atomic Energy Act of 1954*].

Remote-handled (RH) waste containers produce greater than 200 mrem per hour dose rates at the container surface. RH waste contains a high proportion of radionuclides that produce highly penetrating radiation. Thus, RH containers require special handling and/or shielding during operations.

Transuranic (TRU) waste is waste that contains alpha particle-emitting radionuclides with atomic numbers greater than that of uranium (92), half-lives greater than 20 years, and concentrations greater than 100 nanocuries per gram of waste. TRU waste is not high-level waste. Some TRU waste also has hazardous components and sometimes is referred to as TRU mixed waste.

Temporary Emergency Exposure Limits (TEELs) are established by the U.S. Department of Energy, Subcommittee on Consequence Assessment and Protective Actions (WSMS-SAE-99-0001 2000). The limits for uranium oxide are the same or more conservative than for metal. The U.S. Department of Energy, Emergency Management Guide (DOE-G-151.1-1) calls for the use of TEELs when Emergency Response Planning Guidelines (ERPGs) are not available. Although ERPGs are the standard community exposure limits approved by the American Industrial Hygiene Association, less than 100 chemicals have been assigned ERPGs, and none of these include compounds of uranium. The definition of the TEEL limits use uranium oxide as the most conservative and bounding chemical for threshold limits as follows.

- TEEL-0: The threshold concentration below which most people will experience no appreciable risk of health effects. The TEEL-0 is 0.05 milligram per cubic meter (mg/m^3).

- TEEL-1: The maximum concentration in air below which it is believed nearly all individuals could be exposed without experiencing other than mild transient health effects or perceiving a clearly defined objectionable odor. The TEEL-1 is 0.6 mg/m^3.

- TEEL-2: The maximum concentration in air below which it is believed nearly all individuals could be exposed without experiencing or developing irreversible or other serious health effects or symptoms that could impair their abilities to take protective action. The TEEL-2 is 1.0 mg/m^3.

- TEEL-3: The maximum concentration in air below which it is believed nearly all individuals could be exposed without experiencing or developing life-threatening health effects. The TEEL-3 is 10 mg/m^3.

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